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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,626	10/23/2003	Robert J. Small	060937-217-US	5914
7590 03/06/2006 MORGAN, LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE, N.W. WASHINGTON, DC 20004			EXAMINER CHEN, KIN CHAN	
			ART UNIT 1765	PAPER NUMBER

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/690,626	Applicant(s) SMALL ET AL.	
	Examiner Kin-Chan Chen	Art Unit 1765	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-12, 14, 15, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-7, 9-12, 14, 15, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09132004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of claim 9 in the reply filed on January 30, 2006 is acknowledged. In light of applicant's remark, the examiner withdraw the restriction /election requirement on claim 22. The claim 22 is therefore examined in this office action.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement (claim 8), the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Claim Rejections - 35 USC § 112*

2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 9, "chelator compounds **does not comprise** poly(styrene sulfonic acid), poly(vinyl sulfonic acid), poly(acrylic acid), poly(methacrylic acid), a poly(acrylate), a poly(methacrylate), a poly(alkacrylate), poly(maleic acid), poly(vinyl acetate), poly(vinyl alcohol), or a mixture or copolymer thereof." is indefinite because it was an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly

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and particularly pointing out what they did invent. In *re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953), MPEP 2173.05(i).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

***Claim Rejections - 35 USC § 102***

4. Claims 3-5 and 14 are rejected under 35 U.S.C. 102(a) as being anticipated by Ueda et al. (US 2003/0017785; hereinafter "Ueda").

In a method and composition for polishing, Ueda teaches that a polishing slurry may comprise a polishing accelerator [0031], a diluent, an abrasive material, and plurality of chelating particles that are insoluble in the diluent. The chelating particles may comprise a particle and a plurality of chelator compounds attached to the surface. The chelating particles have a net negative zeta potential. See [0008], [0018], [0023], [0027], [0031], [0033], [0039].

As to claim 5, the chelating particle has an average particle size within the claimed range [0022].

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 6, 7, 9-12, 15, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (US 2003/0017785; hereinafter "Ueda") in view of Obanawa et al. (US 4,732,887).

In a method and composition for polishing, Ueda teaches that a polishing slurry may comprise a polishing accelerator[0031]; a diluent, an abrasive material, and plurality of chelating particles that are insoluble in the diluent. The chelating particles may comprise a particle and a plurality of chelator compounds attached to the surface. The chelating particles have a net negative zeta potential. See [0008], [0018], [0023], [0027], [0031], [0033], [0039].

Unlike the claimed invention, Ueda does not teach the chelating particle may comprise a metal oxide abrasive and a plurality of chelator compounds recited in instant claims. In a method for forming composite chelating particles, Obanawa teaches that the chelating particle may comprise a metal oxide abrasive and a plurality of chelator compounds and it can advantageously be used as an adsorbent. See abstract; col. 4, lines 23-30; col. 9, lines 62-68; col. 10, lines 1-22; col. 11, lines 23-45. Hence, it would

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have been obvious to one with ordinary skill in the art to modify Ueda by using the composite chelating particles as taught by Obanawa in order to efficiently chelate (or adsorb) the metallic residues.

As to dependent claim 2, see col. 4, lines 23-30 of Obanawa.

As to dependent claims 6-8, see col. 9, lines 62-68 and col. 10, lines 1-22 of Obanawa. Claims 6 and 15 specify that at least a portion of the functional groups is no further than about 7 angstroms from another functional group. Since the compound is used as a chelating agent, it is expected that the distance between two functional groups are adjusted so as to efficiently chelate the metallic residues depending on the product requirement, therefore, it is merely a matter of choice of design depending on the product requirement. As to dependent claims 22 and 23, since same material and composition are disclosed in the prior art, the limitation of "attached by a covalent chemical bond" would have been expected.

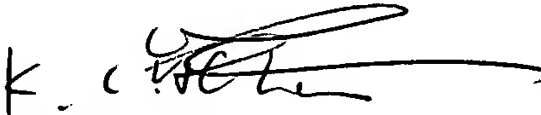
As to dependent claims 10-12, Obanawa (col. 10, lines 1-22) teaches that the polymeric or oligomeric group may be included in the chelating compound which contains a plurality of functional groups, therefore, the polymeric or oligomeric group is considered to read on the spacer in the instant claims. Claim 11 specifies that the spacer comprises at least about 10 carbon atom linkages. Because same is merely a matter of choices of design depending on the product requirements, it would be obvious to one skilled in the art to use various sizes of polymer chain (carbon atom linkages) in order to accommodate the specific chelating agent and meet the product requirement.

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Dependent claim 22 differs from the combined prior art by specifying well-known features (such as chelating compound having at least three sulfonic acid groups) to the art of polishing and wet etching, the examiner takes official notice. It is the examiner's position that a person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify the combined prior art by adding any of same well-known features to same in order to efficiently chelate the metallic residues with a reasonable expectation of success.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 2, 2006

  
Kin-Chan Chen  
Primary Examiner  
Art Unit 1765